

1 **CLAIMS**

2 1. A method comprising:
3 receiving a plurality of events;
4 applying the plurality of events to a correlation function, wherein the
5 correlation function is implemented as a state machine; and
6 generating a specific event if the correlation function is satisfied by the
7 plurality of events.

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9 2. A method as recited in claim 1 wherein the correlation function is a
10 class object.

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12 3. A method as recited in claim 1 further including:
13 receiving a data element; and
14 applying the data element and at least one of the plurality of events to the
15 correlation function.

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17 4. A method as recited in claim 1 further including:
18 receiving a plurality of data elements; and
19 applying the plurality of data elements and the plurality of events to the
20 correlation function.

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22 5. A method as recited in claim 1 further including communicating the
23 specific event to at least one event consumer that subscribed to the specific event.

1 6. A method as recited in claim 1 further including continuing to receive
2 additional events and apply the additional events to the correlation function if the
3 correlation function is not satisfied by the plurality of events.

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5 7. A method as recited in claim 1 further including resetting the
6 correlation function after generating a specific event.

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8 8. A method as recited in claim 1 further including:
9 creating an instance of a particular state machine; and
10 defining transitions for the particular state machine by subscribing to at
11 least one event.

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13 9. A method as recited in claim 8 further including applying an update
14 consumer to the particular state machine to update the state of the particular state
15 machine.

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17 10. One or more computer-readable memories containing a computer
18 program that is executable by a processor to perform the method recited in claim
19 1.

1 11. A method comprising:
2 receiving a plurality of events;
3 receiving a plurality of data elements;
4 identifying a plurality of correlation functions;
5 applying the plurality of events and the plurality of data elements to the
6 plurality of correlation functions; and
7 generating a specific event if at least one of the plurality of correlation
8 functions is satisfied.

9
10 12. A method as recited in claim 11 wherein each of the plurality of
11 correlation functions is implemented as a state machine.

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13 13. A method as recited in claim 11 wherein each of the plurality of
14 correlation functions is an instance of a class object.

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16 14. A method as recited in claim 11 further including communicating
17 the specific event to at least one event consumer that subscribed to receive the
18 specific event.

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20 15. A method as recited in claim 11 further including:
21 receiving additional events;
22 receiving additional data elements; and
23 applying the plurality of events, the additional events, the plurality of data
24 elements and the additional data elements to the plurality of correlation functions.

1 **16.** A method as recited in claim 11 further including:
2 receiving additional events;
3 receiving additional data elements;
4 receiving additional correlation functions; and
5 applying the plurality of events, the additional events, the plurality of data
6 elements and the additional data elements to the plurality of correlation functions
7 and the additional correlation functions.

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9 **17.** A method as recited in claim 16 further including generating the
10 specific event if at least one of the plurality of correlation functions or at least one
11 of the additional correlation functions is satisfied.

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13 **18.** A method as recited in claim 11 wherein the specific event
14 generated is dependent on which correlation function is satisfied.

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16 **19.** One or more computer-readable memories containing a computer
17 program that is executable by a processor to perform the method recited in claim
18 11.

1 **20.** A method comprising:

2 identifying a schema for creating state machines, the state machines to
3 correlate at least two events;

4 creating an instance of a particular state machine;

5 defining transitions for the particular state machine by subscribing to at
6 least one event; and

7 applying an update consumer to the particular state machine to update the
8 state of the particular state machine.

9
10 **21.** A method as recited in claim 20 further including deleting the
11 particular state machine if the particular state machine reaches a final state.

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13 **22.** A method as recited in claim 20 wherein the particular state machine
14 includes a timer, the method further including deleting the particular state machine
15 if the timer expires.

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17 **23.** A method as recited in claim 20 wherein the particular state machine
18 correlates at least one event and at least one data element.

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20 **24.** A method as recited in claim 20 wherein the particular state machine
21 correlates a plurality of events and a plurality of data elements.

22
23 **25.** A method as recited in claim 20 further including determining a
24 current state of the particular state machine.

1 26. A method as recited in claim 20 wherein the particular state machine
2 is an instance of a class object.

3
4 27. One or more computer-readable memories containing a computer
5 program that is executable by a processor to perform the method recited in claim
6 20.

7
8 28. An apparatus comprising:
9 a plurality of event consumers; and
10 an event correlator coupled to the plurality of event consumers, the event
11 correlator to receive events from at least one event source and to receive data
12 elements from at least one data source, the event correlator further to receive at
13 least one correlation function and to apply the received events and the received
14 data elements to the correlation function, wherein the event correlator generates a
15 specific event if the received events and the received data satisfy the correlation
16 function.

17
18 29. An apparatus as recited in claim 28 wherein the event correlator
19 communicates the specific event to the plurality of event consumers.

20
21 30. An apparatus as recited in claim 28 wherein the event correlator
22 communicates the specific event to event consumers that have requested to receive
23 the specific event.

1 **31.** An apparatus as recited in claim 28 wherein the event correlator
2 communicates the specific event to a plurality of filters, wherein each of the
3 plurality of filters is associated with one of the plurality of event consumers.

4
5 **32.** An apparatus as recited in claim 28 wherein the event correlator
6 includes at least one state machine to implement the correlation function.

7
8 **33.** An apparatus as recited in claim 28 wherein the event correlator
9 includes at least one state machine to implement the correlation function, wherein
10 the event correlator identifies a current state of each state machine.

11
12 **34.** An apparatus as recited in claim 28 wherein the event correlator
13 continues to receive additional events and additional data elements and apply the
14 additional events and the additional data elements to the correlation function.

15
16 **35.** One or more computer-readable media having stored thereon a
17 computer program that, when executed by one or more processors, causes the one
18 or more processors to:

19 receive a plurality of events;

20 identify a plurality of correlation functions;

21 apply the plurality of events to the plurality of correlation functions to
22 determine whether any of the plurality of correlation functions are satisfied by the
23 plurality of events; and

24 generate a specific event if one of the plurality of correlation functions is
25 satisfied by the plurality of events.

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2 36. One or more computer-readable media as recited in claim 35
3 wherein the plurality of correlation functions are implemented as state machines.
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5 37. One or more computer-readable media as recited in claim 35
6 wherein each of the plurality of correlation functions is implemented as a state
7 machine, and wherein the state machine is a class object.
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9 38. One or more computer-readable media as recited in claim 37 further
10 causing the one or more processors to identify a current state of the state machine.
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12 39. One or more computer-readable media as recited in claim 35 further
13 causing the one or more processors to:
14 create a new instance of a state machine to implement a particular
15 correlation function; and
16 define transitions for the new instance of the state machine by subscribing
17 to at least one event.
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